

$$\textcircled{9} \quad 2x^4 + x^2 - 2 = 0 \quad \text{let } y = x^2$$

$$2y^2 + y - 2 = 0$$

$$y = \frac{-1 \pm \sqrt{1 - 4(2)(-2)}}{2 \cdot 2}$$

$$y = \frac{-1 \pm \sqrt{17}}{4}$$

$$x^2 = \frac{-1 \pm \sqrt{17}}{4}$$

$$x = \pm \sqrt{\frac{-1 \pm \sqrt{17}}{4}}$$

$$x = \pm \frac{\sqrt{-1 \pm \sqrt{17}}}{2}$$

$$x = \pm \frac{\sqrt{1 + \sqrt{17}}}{2}, \pm \frac{\sqrt{-1 - \sqrt{17}}}{2}$$

$$x = \pm \frac{\sqrt{1 + \sqrt{17}}}{2}, \pm \frac{\sqrt{-1(1 + \sqrt{17})}}{2}$$

$$\pm \frac{i\sqrt{1 + \sqrt{17}}}{2}$$

$$\pm \frac{\sqrt{1 + \sqrt{17}}}{2} i$$

$$\textcircled{13} \quad 3 + \frac{3}{x^2+1} = \frac{2}{(x^2+1)^2}$$

$$(13) \quad 4x^{-2} - 9x^{-1} - 5 = 0$$

$$\text{Let } y = x^{-1}$$

$$4y^2 - 9y - 5 = 0$$

$$y = \frac{9 \pm \sqrt{81 + 80}}{8}$$

$$y = \frac{9 \pm \sqrt{161}}{8}$$

$$x^{-1} = \frac{9 \pm \sqrt{161}}{8}$$

$$x = \frac{8}{9 \pm \sqrt{161}} \cdot \frac{9 \pm \sqrt{161}}{9 \pm \sqrt{161}} = \frac{72 \pm 8\sqrt{161}}{81 \pm 161}$$

$$\frac{72 \pm 8\sqrt{161}}{81 \pm 161}, \frac{72 \pm 8\sqrt{161}}{-80} = \frac{-9 \pm \sqrt{161}}{10}$$

B

$$(23) \quad 2\sqrt[3]{x^2} - 5\sqrt[3]{x} - 3 = 0$$

$$\textcircled{23} \quad x^{1/2} \quad x^{1/4} \quad 4\sqrt{x} - 9\sqrt[4]{x} + 4 = 0$$

$$y = x^{1/4}$$

$$4y^2 - 9y + 4 = 0$$

$$x = \frac{9 \pm \sqrt{81 - 4(4)(4)}}{8}$$

$$x = \frac{9 \pm \sqrt{17}}{8} \quad \Delta \quad 9 \pm \sqrt{17}$$

$$x^{1/4} = \frac{9 \pm \sqrt{17}}{8}$$

 \Rightarrow

$$\left(\frac{9 \pm \sqrt{17}}{8} \right)^4$$

~~$$x = \frac{6561 \pm 289}{4096}$$~~

~~21~~
⑤ — X

$$X = 3\sqrt{X}$$

$$X^2 = 9X$$

$$X^2 - 9X = 0$$

$$X(X-9) = 0$$

$$(25) \sqrt{2\sqrt{7x+2}} = \sqrt{3x+2}$$

$$3x+2 > 0$$

$$3x > -2$$

$$x > -\frac{2}{3}$$

$$2\sqrt{7x+2} = 3x+2$$

$$4(7x+2) = 9x^2 + 12x + 4$$

$$28x + 8 = 9x^2 + 12x + 4$$

$$-2\sqrt{7x+2} = 3x+2$$

$$2\sqrt{7x+2} = -3x-2$$

$$0 = 9x^2 - 16x - 4$$

$$0 = (x-2)(9x+2)$$

$$x=2 \quad | \quad x=-\frac{2}{9}$$